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ABSTRACT

Research findings on the subject of spelling have been compiled in this paper to assist individuals attempting to improve their effectiveness in the classroom. Investigations in spelling instruction have shown wide differences among students in all classes. These differences point to needs for classroom organization and instruction methods that will permit teachers to meet individual needs within their classrooms. Two major responsibilities of teachers of spelling are, first, wise choice of words to be taught, and second, application of effective teaching methods as they teach the selected words. Selection of words should be based on child and adult usage. These words have been largely determined by a series of well-conducted studies. Research in methodology has produced information that should be used by teachers as they organize for and decide on methods of instruction. The findings tend to support the following conclusions: (1) Children learn to spell many words in an incidental way as they study other subjects; (2) The column, or list, approach is more efficient than is the context approach; (3) Study steps have been determined which are helpful to children when they learn to spell a word; (4) The test-study-test approach is superior to the study-test approach from the middle of the third grade on; and (5) Children benefit from learning only a few spelling rules. Continued attention is recommended in the areas of spelling reform, application of past research and proven study steps and individualized instruction. (Author/CK)

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APPLICATION OF SPELLING RESEARCH

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APPLICATION OF SPELLING RESEARCH

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CHAPTER I

INTRODUCTION

One of the more widely researched areas of the curriculum is the teaching of spelling. Even though findings reveal some conflicts, there is much agreement from which the classroom practitioner can gain helpful direction. It will be observed that much of the research was conducted prior to 1940; and while a few researchers have attempted to investigate previously unexplored aspects of spelling, the most recent research has substantiated earlier findings.

In his review of spelling research, published in the 1960 edition of the Encyclopedia of Educational Research, Ernest Horn[1] stated that:

> While the existing evidence will be refined, enlarged, and in some instances, corrected by new research, the chief problem today appears to be a more critical and universal application of the evidence now available.

It appears that one of the tasks before the spelling teacher is to search the literature and discover and apply the evidence now available. By bringing together pertinent early and recent research findings, the authors of this paper hope to assist individuals attempting to improve their teaching effectiveness.

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[1]Ernest Horn. "Spelling," Encyclopedia of Educational Research, Third Edition (Edited by Chester M. Harris). New York: The Macmillan Company, 1960, p. 1350.

CHAPTER II

PROBLEMS FACED BY THE SPELLER

It is unlikely that a person can obtain an adequate understanding of spelling research findings and their implications without first obtaining some knowledge and understanding of the nature of the spelling process and the problems people face when they use the 26 letters in the English alphabet to represent 50 different sounds. Not only is one written symbol frequently required to represent more than one sound, but a complicated system has "evolved" in which two symbols are sometimes written to represent one sound in one context and a different sound in another context. A major source of confusion results from the schwa (a) sound which is represented in different words by any of the vowels a, e, i, o, or u, (e.g., general, arithmetic, determine, become, study) and it is sometimes represented by combinations of these vowels, (e.g., certain and question). Children and adults are often confused by the fact that the letter "c" has no sound of its own and usually sounds like "s" when followed by the letters i, e, or y. It usually sounds like "k" when followed by other letters in the alphabet. Boyer[1] has given examples of fifteen different ways in which the long "a" sound can be written, and Horn[2] states that "the long 'e' sound is spelled 14 ways in common words and only about one-fifth of the time with 'e' alone." The letters x and q appear to serve no useful purpose and many silent letters along with other inconsistencies are sources of confusion for the speller of English. It should be recognized that some students who are branded "dull" or "lazy" are often victims of an inconsistent system which they find impossible or, at best, difficult to master.

Attempted Reform

The problems of the speller have not gone unnoticed and through the years several serious and scholarly attempts have been made to reform the spelling of the English language. Attempts to "bring order" out of orthographic confusion have been under way since the middle of the fourteenth century. Each century since that time has seen serious attempts to overcome the problems. Benjamin Franklin make extensive changes in American spelling in 1768, and Noah Webster introduced many new spellings. Since the latter part of the eighteenth century, several organized societies have developed and recommended the adoption of rules which would have greatly simplified English spelling; however,

> Although the changes recommended by these various organizations were scholarly and, in the main, conservative, neither the general rules suggested for simplifying our spelling nor the lists of words recommended for simplification have much influence, unfortunately, on present-day spelling.[3]

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[1]Harvey Kinsey Boyer. "Why You Can't Spell," Science Digest, 37:83-86, January, 1955.

[2]Ernest Horn. op. cit., p. 1338.

[3]Ibid., p. 1338.

Present System Must be Taught

Efforts are still being made to simplify the language problems; but past experience dictates that teachers in the classrooms must not wait for widespread changes before they teach children how to spell, for it is most likely that children will have completed school before hoped-for changes will be realized. It would appear that teachers are faced with the problem of doing the best they can with the system they have; and it seems wise that while people work for changes, they must consider the obstacles to reform and appreciate the many advantages of the present system. It remains the educator's responsibility to do all he can to help children become proficient with the system as it exists.

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[1]W. J. Stevens. "Obstacles to Spelling Reform," English Journal, 54:85-90, February, 1965.

CHAPTER III

CHALLENGES OF THE SPELLING TEACHER

Individual Differences in Spelling

> It has been in our schools more than in any other place that individual differences have come to our attention.[1]

Research and experience have shown the range of spelling ability and achievement to be great among students in all grades.[2] Observant teachers and others who have access to written work or spelling tests of school children are very much aware of these differences. The differences have been illustrated in research since the early part of this century. In 1913, Buckingham[3] conducted a study of children in grades three through eight titled "Spelling Ability, Its Measurement and Distributions"from which he reported that pupils of every grade between the third and eighth grades perform like typical children of every other grade within the range. In 1927, George D. Strayer[4] conducted an extensive survey of the schools of Duval County, Florida, including the city of Jacksonville. In the sixth grade he reported a range in spelling ability equal to ten school grades. There was a range of two and one-half years between the lowest and highest scores of those pupils in the middle fifty percent. This range increased to almost three years in the eighth grade. It has been noted in many instances that there is a spread of academic achievement as children grow older and progress from grade to grade.

Choice of Vocabulary and Methods of Teaching

There are two important and distinct problems involved in the teaching of spelling: first, the choice of words to be taught, and second, the methods of teaching and learning those words.

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[1]Leona E. Tyler. The Psychology of Human Differences. New York: Appleton-Century-Crofts, Inc., 1956. p. 109.

[2]Thomas D. Horn, and Henry J. Otto. Spelling Instruction: A Curriculum Wide Approach. Austin, Texas: Bureau of Laboratory School, University of Texas, 1954. p. 15.

[3]B. R. Buckingham. Spelling Ability, Its Measurement and Distributions. Teachers College Contributions, No. 59. New York: Columbia University, 1913. p. 32.

[4]George D. Strayer. Report of the Survey of the Schools of Duval County, Florida Including the City of Jacksonville. New York: Columbia University Press, 1927. p. 147.

Choice of words. It is obvious that the choice of words to be included in a spelling program will in part, at least, be based upon those that children habitually use. Horn[1] has stated, "The frequency with which words are written by children in a given grade is now generally regarded as the primary principle for the selection of words for that grade." In another publication he[2] reported, "It seems desirable that the words to be taught in any grade should be chosen from among those words that appear in the writing done by children in that grade and from words used in adult writing, thus insuring both present and future value." Several studies have been conducted for the purpose of discovering which words should be included in spelling programs. Among those which determined either children or adult writing vocabularies are investigations by Thorndike and Lorge,[3] Fitzgerald,[4] Dolch,[5] Horn,[6] and Rinsland.[7] A great deal of detailed examination has been done on the words identified by these studies. They have been analyzed according to usage by children in specific grades, by frequency of use by children in general, and by frequency of use by adults. It appears that the results of these researches can serve as guides for people who prepare basic lists of words to be used in regular spelling programs and thus help solve one of the two important problems involved in the teaching of spelling.

Methods of teaching. The second problem involved in the teaching of spelling is that of selecting the proper instructional techniques for teaching words after they have been selected. Even though considerable research has been done in identifying kinds of spelling errors made, there has been little change in the

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[1]Ernest Horn, Teaching Spelling. What Research Says to the Teacher, No. 3. American Education Research Association. Washington, D. C. : the Association, 1954. p. 7.

[2]Ernest Horn. "Spelling", Encyclopedia of Educational Research, Third Edition (Edited by Chester W. Harris). New York: The MacMillan Company, 1960. p. 1344.

[3]Edward L. Thorndike and Irving Lorge. The Teacher's Word Book of 30,000 Words. New York: Teachers College, Columbia University, 1944.

[4]James A. Fitzgerald. "Words Misspelled Most Frequently by Children of the Fourth, Fifth, and Sixth Grade Levels in Life Outside the School," Journal of Educational Research. 26:213-18, November, 1932.

[5]Edward W. Dolch. Better Spelling. Champaign, Illinois: The Garrard Press, 1960.

[6]Ernest Horn. A Basic Writing Vocabulary. Iowa City: University of Iowa, 1926.

[7]Henry D. Rinsland. A Basic Vocabulary of Elementary School Children. New York: The MacMillan Company, 1945.

techniques of teaching spelling from the early days of this century until the decade of the 1950's.[1] Fitzgerald[2] says:

> Although many spelling investigations have been carried out during the past half century, improvement in teaching of spelling has been slow. One of the chief difficulties seems to have been that the results of research and experimentations were not readily available to the teacher.

Analysis of Methods and Approaches

Some methods and approaches of spelling instruction that have been tried, tested, or highly recommended include: (1) an incidental method by which children were expected to learn how to spell as they progressed through the grades without formal instruction in spelling and without the use of organized spelling meterials, (2) study of words in context as opposed to lists, (3) the effectiveness of study steps, (4) the test-study-test approach versus the study-test approach, (5) a method by which children spell through application of learned spelling rules, (6) a method by which children spell by application of phonetic analysis techniques, and of late, (7) individualized spelling approaches. Also investigated has been the amount of time each week that can be used effectively in spelling instruction.

Incidental approach. Considerable support has been voiced for a purely incidental approach to spelling since the latter part of the nineteenth century. Advocates of this position have not been without opponents, however.[3] The evidence of the past several years appears to support the position that even though spelling performance improves as a result of incidental learning, more than an incidental approach is desirable. Fitzgerald,[4] who refers to Sr. Gervase Blanchard, says,

> Her findings coupled with the findings of Gates and others indicate that teaching the individual child a method by which he can learn to spell a word in a systematic manner is highly important. It seems pedagogically unsound to abandon the child to a trial and error procedure for learning to spell a word.

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[1]Paul R. and Jean S. Hanna. "Spelling Today," Instructor, 70:6, November, 1960.

[2]James A. Fitzgerald. The Teaching of Spelling. Milwaukee: The Bruce Publishing Co., 1951. p. 3.

[3]John E. Wallin. Spelling Efficiency in Relation to Age, Grade and Sex, and the Question of Transfer. Baltimore: Warwick and York, 1911.

[4]Fitzgerald, op. cit., p. 40.

Hanna and Moore[1] report:

> The subject-matter teachers have a serious responsibility in the business of checking spelling. However, spelling also needs to be taught separately in definite work sessions. We must not allow spelling to "go by the board" in the sense of being casual or incidental; for proficiency in spelling is basic to success in all subjects where ideas must be expressed through writing.

It has been found that spelling has a high correlation with some phases of a child's ability in other subjects. Positive correlations exist between spelling[2] and vocabulary,[3] and spelling and reading.[4]

Context approach versus column approach. Several individuals have investigated ways in which words should be taught for maximum efficiency and effectiveness. Howley[5] compared the list method with the sentence method and concluded that pupils who use the list method did better than those who used the sentence method. Winch[6] in his summary conclusions of eight experiments used the term "direct" for the study of words in list and the term "indirect" for study of words in context when he concluded the "direct" method of teaching spelling had proved superior to the "indirect" method. He also indicated that use of the "direct" method resulted in superior transfer value when children write dictation, greater usage in original compositions, less time consumed, and better delayed recall than did the "indirect" method. Possibly the most influential study that attempts to answer this question was reported by McKee[7] in which he concluded the columnar method to be superior to context forms of spelling instruction.

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[1]Paul R. Hanna and James T. Moore, Jr. "Spelling--From Spoken Word to Written Symbol," Elementary School Journal, 53:335, February, 1953.

[2]Gertrude Hildreth. Teaching Spelling. New York: Henry Holt and Company, 1955. p. 27.

[3]Arnie E. Richmond. "Children's Spelling Needs and the Implications of Research," Journal of Experimental Education, 29:19, September, 1960.

[4]Ida E. Morrison and Ida F. Perry. "Spelling and Reading Relationships with Incidence of Retardation and Acceleration," Journal of Educational Research, 52:225, February, 1959.

[5]W. E. Howley and Jackson Gallup. "The 'List' Versus the 'Sentence' Method of Teaching Spelling," Journal of Educational Research, 5:310, April, 1922.

[6]W. H. Winch. "Additional Researches on Learning to Spell," Journal of Educational Psychology, 7:109-10, February, 1916.

[7]Paul McKee. "Teaching Spelling by Column and Context Forms," Journal of Educational Research, 15:254, April, 1927.

In studies that have been conducted for the purpose of discovering which method -- the list approach or context approach to spelling -- is most efficient, the bulk of the evidence favors the list method. However, a ten week study reported by Hahn[1] in 1960 resulted in the conclusion that the contextual method is "at least" as effective as the column method.

Effectiveness of study steps. Considerable research has been done to determine the best methods for learning to spell a word. The steps that have been well established and are recommended are:[2]

1. Pronounce each word carefully
2. Look carefully at each part of the word as it is pronounced
3. Say the letters in sequence
4. Attempt to recall how the word looks and spell the word to oneself
5. Check this attempt to recall
6. Write the word
7. Check this spelling attempt
8. Repeat the above steps if necessary

The above (or similar) steps are found in most modern spelling books.

It has been the experience of the authors that the study steps are valid and helpful when properly applied, but children often have difficulty when they apply the steps to words they are attempting to learn. Part of the problem appears to be that children memorize the study steps, but few learn to apply them properly. Others have experienced difficulty in getting children to apply the study steps and have attempted to modify them to make them more functional. One such attempt is reported by Gilstrap[3] in which the recommended study steps were:

1. Look at the word and say it softly. If it has more than one part, say it again, part by part, looking at each part as you say it
2. Look at the letters and say each one. If the word has more than one part, say the letters part by part
3. Write the word without looking at the book.

It would appear that simplified study procedures might be more functional for children than the more involved ones, but need considerable research before they can justifiably replace the study steps already proven effective.

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[1]William P. Hahn. Comparative Efficiency of the Contextual Methods. Unpublished doctoral dissertation. University of Pittsburgh, 1960.

[2]Ernest Horn. Teaching Spelling. What Research Says to the Teacher, No. 3. American Education Research Association. Washington, D. C.: the Association, 1954. p. 12.

[3]Robert Gilstrap. "Development of Independent Spelling Skills in the Intermediate Grades," Elementary English, 39:481-3+, May, 1962.

Test-study-test approach versus study-test approach. Research findings comparing the study-test method and the test-study method, strongly favor the test-study method.[1] Gates[2] found this true for all grades above early third. Before early third the study-test had more favorable results, but thereafter the test-study produced statistically significant differences. Fitzgerald[4] appears to support the idea that a pretest method may even be better in early grades, and findings reported by Thomas Horn[4] support the value of using a pretest in the early grades. In the sixth grade, Thomas Horn[5] found the corrected test to contribute "from 90 percent to 95 percent of the achievement resulting from combined effort of the pronunciation exercise, corrected test and study." He writes, "the corrected test appears to be the most important single factor contributing to achievement in spelling." The use of self-check tests for reinforcement of spelling lessons was found valuable and it "results in the learning of a significantly greater number of words than usual techniques for teaching spelling."[6] In 1962, Schoephoerster[7] substantiated the above results for students with high and medium spelling ability. In his study, fifth grade students with below average ability benefited more from study-test procedures.

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[1]James A. Fitzgerald. The Teaching of Spelling. Milwaukee: The Bruce Publishing Co., 1951. pp. 39-40.

[2]Arthur I. Gates. "An Experimental Comparison of the Study-Test and Test-Study Methods in Spelling," The Journal of Educational Psychology, 22:18, January, 1931.

[3]James A. Fitzgerald. "Research in Spelling and Handwriting," Review of Educational Research, 22:91, April, 1952.

[4]Thomas D. Horn. "Research in Spelling," Elementary English, 37:174-7, March, 1960.

[5]Thomas D. Horn. "The Effect of the Corrected Test on Learning to Spell," Elementary School Journal, 47:285, January, 1947.

[6]Gerald C. Eichholz. "Spelling Improvement Through a Self-Check Device," Elementary School Journal, 64:376, April, 1964.

[7]H. Schoephoerster. "Research into Variations of the Test-Study-Plan of Teaching Spelling," Elementary English, 39:460-2, May, 1962.

Value of rules in spelling. Over thirty years ago, several studies were conducted for the purpose of answering the question, "To what extent should rules be taught in order to help children learn to spell?" Several of these studies have been reported by Foran,[1] Sartorius,[2] and King.[3] Foran's pertinent summary may be paraphrased as follows:

1. Only a few rules should be taught. Those taught should have no or few exceptions.
2. Some rules should be taught, for children will generalize what they have learned and such generalization should be directed as far as the spelling of English words permits.
3. Only one rule should be taught at a time.
4. A rule should be taught only when there is need of it.
5. The teaching of the rules should be integrated with the arrangements or grouping of the words in the textbook.
6. Rules should be taught inductively rather than deductively.
7. There should be ample reviews of the rules both in the grades in which they have been learned and in the following grades.
8. Tests of knowledge of the rule should insist not so much upon logical precision as on comprehension and ability to use the rule.

Even though the bulk of past and present evidence supports the above findings, there are some reports which are not in complete agreement. One such report was made by Sister Evangelist Marie.[4] Her findings support the idea that children benefit more from studying words according to meaning than they do by studying rules either inductively or deductively. She found the deductive method superior to the inductive one. Her study was conducted over a period of only eight weeks, however, and she implied that pupils probably lacked sufficient training in forming generalizations.

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[1]Thomas G. Foran. The Psychology and Teaching of Spelling. Washington, D. C.: Catholic Education Press, 1934.

[2]Ina Craig Sartorius. Generalization in Spelling. New York: Teachers College, Columbia University, 1931.

[3]Luella M. King. Learning and Applying Spelling Rules in Grades Three to Eight. New York: Teachers College, Columbia University, 1932.

[4]Sister Evangelist Marie. "Study of Teaching Rules in Spelling," Elementary English, 40:602-4, October, 1963.

Value of phonetic instruction. Horn[1] sums up most research findings when he says that a child's knowledge of phonetic principles has been found to play an important role in his being able to spell, but instruction in phonics should be regarded as an aid to spelling rather than a substitute for the systematic study of words in the spelling list. Hanna and Moore[2] give support to the need to learn phonetic generalizations while Hahn[3] and Ibeling[4] find that phonetic drill is no particular aid to spelling ability. Hahn says, "The results of the spelling test did not bear out the assumption that increasing phonics ability increases spelling ability."

Individualized approaches. The individualized approach to spelling has been quite controversial in that no common agreement exists on what constitutes an individualized approach to spelling. To some teachers it is little more than incidental learning. In this method children are expected to find for themselves the words they feel should be learned, but they receive no formal spelling instruction. To others individualized spelling is defined much differently. Some teachers attempt to place children at the level of learning for which they are prepared, and students are taught needed skills according to proven methods of instruction.

Even though people are aware of the need to consider individual differences, there are relatively few studies reported in which individualized methods have been used. Some writers, e. g., Hall,[5] Eisman,[6] Goldberg,[7] and Dunne,[8] have published articles which have pointed out the need for individualized instruction and in which some current practices were described. Among the few research

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[1]Ernest Horn. Teaching Spelling. What Research Says to the Teacher, No. 3. American Education Research Association. Washington, D. C.: the Association, 1954. p. 24.

[2]Paul R. Hanna and James T. Moore, Jr., op. cit., p. 337.

[3]William P. Hahn, op. cit.

[4]F. W. Ibeling. "Supplementary Phonics Instruction and Reading and Spelling Ability," Elementary School Journal, 62:152-56, December, 1961.

[5]Norman Hall. "Individualize Your Spelling Instruction," Elementary English, 39:476-7, May, 1962.

[6]Edward Eisman. "Individualizing Spelling," Elementary English, 39:478-80, May, 1962.

[7]A. L. Goldberg. "Programmed Spelling: A Case Study," Audio-Visual Instruction, 8:94-6, February, 1963.

[8]Frank Dunne. "Multilevel Spelling Program Spurs Each Pupil to Achieve Maximum for Self," New York State Education, 47:22, 29, May, 1960.

studies that have been reported, Crosland[1] discovered no significant differences between an individualized approach and a whole-class approach at the eighth grade level. Freyberg[2] found that good spellers benefit from compiling their own lists while poorer spellers made fewer errors on the dictated word test when they used teacher provided lists. A programmed course in spelling developed at Weston, Massachusetts[3] has been reported to benefit children in learning to spell, and Noall[4] has found individualized instruction beneficial to children in some aspects of spelling. Allred[5] reported a two-year longitudinal study which compared an individualized approach that was developed at the Brigham Young University Laboratory School and a whole-class approach which contained common elements. Functional and formal spelling comparisons were made by grade level and by reading levels within grades for students in the intermediate grades. Findings indicated the individualized approach to produce as good or superior results in all instances. When the same two methods were compared in formal spelling for students who were in the third grade during the second year of a two-year study,[6] significant differences were found in favor of the whole-class method for students with low reading ability. Masoner[7] compared the individualized approach referred to above with a different whole-class approach and found significant differences in favor of the individualized approach in both formal and functional spelling at the sixth grade level.

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[1]Mary Thelma Crosland. A Comparison of Two Methods of Teaching Spelling on the Eighth Grade Level. Unpublished Master's Thesis. Eugene, Oregon: The University of Oregon, 1955.

[2]P. S. Freyberg. "Comparison of Two Approaches to the Teaching of Spelling," British Journal of Educational Psychology, 34:178, June, 1964.

[3]Alice K. Edgerton and Ruth W. Twombly. "Programmed Course in Spelling," Elementary School Journal, 62:380-386, April, 1962.

[4]M. S. Noall and G. C. Ceravalo. "Selected Studies in Spelling, Learning, and Reading; Teaching Spelling," Journal of Education, 146:5, April, 1964.

[5]Ruel A. Allred. A Comparison of Individualized, Whole-Class and Combined Approaches in Spelling Instruction. Unpublished doctoral dissertation. University of Oregon, 1965.

[6]Ruel A. Allred, Louise O. Baird and Edwin A. Read. Three Studies in Elementary Spelling Instruction, Provo, Utah, Brigham Young University, 1964.

[7]Gary N. Masoner. A Comparison of a Traditional and an Individualized Method of Teaching Spelling. Unpublished master's field project. Brigham Young University, 1965.

Time allotments for spelling. A study reported by Jarvis[1] in 1963 indicated that children do not benefit from extended periods of study in spelling. He found that children in the intermediate grades benefited as much from a twenty minute spelling period each day as they did from a daily forty minute period. The bulk of earlier findings indicates that children do not benefit from more than seventy-five minutes per week, and there is evidence that this amount of time could be reduced.[2]

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[1]Oscar T. Jarvis. "How Much Time for Spelling?" Instructor, 73:59+, September, 1963.

[2]Ernest Horn. Teaching Spelling. What Research Says to the Teacher, No. 3. American Education Research Association. Washington, D. C.: the Association, 1954. p. 7.

CHAPTER IV

CAUSES OF AND OVERCOMING SPELLING DEFICIENCY

There is a wide range of spelling ability within any normal class. Causes for these differences are many and varied. The problems of identifying reasons for existing differences and their nature are much more taxing than those of locating differences. The causes of some of the most striking differences and those for which teachers and parents should look first are of a physical nature. Quite logically, if a child has extreme health problems, his scholastic ability will be seriously impaired. "Low spelling achievement is much more often due to faulty training in spelling and in other language skills, than it is to physical defects, however."[1]

Frequent Causes of Spelling Deficiency

Several lists of frequently occurring causes of spelling deficiency have been prepared. Two of these lists follow. The first, organized by Hollingworth and referred to by Fitzgerald,[2] includes: (1) sensory defects either of the eye or of the ear, (2) the quality of general intelligence, (3) faulty auditory perception, (4) faulty visual perception, (5) sheer failure to remember, (6) lack of knowledge of meaning, (7) other awkwardness and uncoordination, (8) lapses, (9) transfer of habits previously acquired, (10) individual idiosyncrasies, and (11) temperamental traits. Horn's[3] list includes: (1) poor study habits, (2) lack of sufficient reading, (3) writing slowly or illegibly, (4) faulty speech habits, (5) lack of interest (no other factors impede learning in spelling as much as does a lack of interest or the presence of undesirable attitudes), (6) home conditions, (7) physical characteristics, (8) personality traits, (9) specialized disabilities, (10) lack of good sound perception and discrimination, (11) low intelligence even though high intelligence does not guarantee superior spelling ability, and (12) poor visual memory. Horn says that other than lack of interest, the two most important contributions of a student's inability to spell are lack of auditory imagery and lack of visual imagery.

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[1]James A. Fitzgerald. The Teaching of Spelling. Milwaukee: The Bruce Publishing Company, 1951. p. 191.

[2]James A. Fitzgerald. The Teaching of Spelling. Milwaukee: The Bruce Publishing Company, 1951. p. 193.

[3]Ernest Horn. "Spelling," Encyclopedia of Educational Research, Third Edition (Edited by Chester W. Harris). New York: The MacMillan Company, 1960. pp. 1347-49.

Overcoming Spelling Deficiencies

In attempting to overcome spelling deficiencies within the classroom it is important that efforts be made in productive areas. Since the two most important contributions to good spelling (other than high interest) are the development of efficient auditory and visual imagery, efforts should be exerted in those areas.

Auditory imagery. One of the most needed senses in being able to write words on paper properly is the sense of hearing. Most would suspect that this sense would be critically needed in two respects, that of auditory acuity and auditory discrimination. Templin[1] found that hard-of-hearing and even deaf children made substantially fewer errors than do children who can hear. These findings lead to the conclusion that auditory acuity differences do not differentiate good and poor spellers; however, sound perception and discrimination are significantly related to spelling ability.[2]

The English language is about eighty-five percent phonetic.[3] This accounts for the fact that good auditory perception is a valuable aid to children as they learn to spell. If a child's auditory perception is good, this alone would probably account for more than half the English words he will spell. Considerable work has been done in this area, and the contributions of phonics to spelling were discussed previously.

Visual imagery. One of the main problems in spelling is the inability of children to spell words which are not written according to the rules of phonics. As one investigates this problem, it appears that the major process by which a child learns words not spelled phonetically is by visualizing those words as he has seen them or as they may resemble similar words he has seen. Hunt[4] identifies "the ability to look at a word and to produce it later," as one of the four factors, besides general intelligence, that affect the ability to spell English words. Because the possession of this skill is so important, educators should help children develop it. Unfortunately, helping children develop visual imagery is not a simple task. However, some suggestions have been made for its development

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[1]Mildred Templin. "A Comparison of the Spelling Achievement of Normal and Defective Hearing Subjects," Journal of Educational Psychology, 39:245, October, 1948.

[2]Ernest Horn. "Spelling," Encyclopedia of Educational Research, Third Edition (Edited by Chester W. Harris). New York: The MacMillan Company, 1960. p. 1350.

[3]Don H. Parker and Frederic R. Walker. S.R.A. Teacher's Handbook Spelling Laboratory IIIa. Chicago: Science Research Associates, Inc., 1960.

[4]Barbara Hunt and others. "Elements of Spelling Ability," Elementary School Journal, 63:342, March, 1963.

and a few people have devised methods for its improvement. Durrell and Sullivan[1] suggested there probably should be increased emphasis placed on the association of auditory and visual patterns which make up words in order that pupils may generalize in trying to spell words for which they do not have clear, specific images. Toohy[2] suggested that drawing and typing improve children's ability to look carefully and as a result improve visual memory. Radaker[3] tested a method in which subjects were to visualize words as though they were projected on a large outdoor theater screen. Students tried to stabilize the image and retain it as long as possible. Different methods were used to assist children in producing and retaining the desirable image. He found that developing imagery in this way is successful in improving spelling performance over long periods of time. The eight study steps referred to earlier (p. 8) also depend on, and help develop, visual imagery.

The well known visual, auditory, kinesthetic, and tactile method developed by Grace Fernald[4] helps develop visual imagery in slow learning and remedial pupils. Wheeler and Wheeler[5] have suggested that teachers should: (1) help children build wide associations around the mental image of a word or printed idea which you want remembered, (2) require the student to recall visualizing the word or idea he is trying to remember, (3) increase perceptual spans for thought units, phrase, sentence, and paragraph reading to locate key words and ideas, etc., (4) build the student's sight vocabulary, (5) help students to develop the ability to visualize or personalize what they read or study. For example, teach students to diagram or draw a picture of what they have read.

A relatively small number of methods have been used by teachers to help develop visual imagery. A few methods have been researched and found helpful, but because of the nature of the task and differences among children, most

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[1]Donald D. Durrell and Helen Blair Sullivan with the cooperation of Helan A. Murphey and Kathryn Junkins. Ready To Read. Yonkers-On-Hudson, New York: World Book Co., 1945. p. 469.

[2]Elizabeth Toohy. "Learning to Spell is Learning to See," Elementary English, 29:474, May, 1962.

[3]Leon D. Radaker. "The Effect of Visual Imagery upon Spelling Performance," The Journal of Educational Research, 56:370, March, 1963.

[4]Grace Fernald. Remedial Techniques in Basic School Subjects. New York: McGraw Hill, 1943.

[5]Lester R. Wheeler and Viola D. "Dyslexophoria Symptoms and Remedial Suggestions," Elementary English, 32:310-11, May, 1955.

teachers are left unaided in ways and means of doing a better job. Horn[1] explains the complexity of this problem when he says:

> The use of imagery is obviously related to the practice of recall. Imagery and imagery types are among the most baffling problems in psychology. It is futile to suggest, as is sometimes done, that teachers should discover the image type of each child as a basis for his individual method of study. In the first place, it is doubtful whether students have image types that are so exclusive or even so predominant as this advice implies. In the second place, the trained psychologist cannot attack this problem with confidence, and the task is quite beyond the ability of the classroom teacher.

The authors recognize the problems indicated above and can agree, perhaps, that teachers are unable to identify imagery types of each individual within a classroom, but imagery types must continue to be discovered and methods of instruction used that will satisfy children's needs. To do anything less would be to abandon one of the most critical areas of instruction for developing spelling ability.

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[1]Ernest Horn. "Spelling," Encyclopedia of Educational Research, Third Edition (Edited by Chester W. Harris). New York: The MacMillan Company, 1960. p. 1348.

CHAPTER V

FUTURE NEEDS IN SPELLING INSTRUCTION

Logical questions that might be expected regarding spelling are: "What does the future hold for spelling instruction?" and "What areas of spelling need to be researched?" No absolute answers can be given these questions; however, we are reasonably sure that school districts, schools, and individual classroom teachers will continue to use published spelling programs for several years to come. Along with these programs there will be an increase of supplemental programs within individual classrooms that are geared more to the students' needs.

The authors feel that continued attention should be given to (1) spelling reform, (2) application of past research, (3) application of proven study steps, and (4) individualizing instruction. Much fruitful research can be conducted in the areas of (1) individualizing instruction, (2) visual imagery, (3) programmed learning, and (4) machine teaching, once programs have been developed to the point that they can be researched properly.

Spelling Reform

Although there are many strengths to the English language as it now exists, there appears to be considerable need for continued reform. Scholarly studies should be conducted and support should be given to the valid changes which are recommended for the simplification of English spelling.

Application of Past Research

Since the chief problem today appears to be "a more critical and universal application of the evidence now available," educators are encouraged to become well acquainted with the research related to the teaching of spelling. They should exert continued efforts to insure utilization of valid findings within each classroom.

Application of Study Steps

Steps have been found that are very helpful in learning to spell words; however, though many people memorize the steps, few actually learn to apply them. It is recommended that teachers both learn and teach application of study steps to words that are being studied.

Individualized Instruction

A trend that is becoming more prevalent throughout the nation is that of individualized spelling instruction. This trend will probably continue but different methods should be devised which will help meet the needs of individual children within the classrooms. This suggests the need for developing individualized spelling methods that can be used with all children in additon to the development of ways of determining and meeting individual student needs within each classroom. Once individualized methods have been developed they should be intensively researched in order to establish their value.

Visual Imagery

Visual imagery is one of the two most important contributions to good spelling, yet little concrete help is available to teachers and children concerning its development. Serious efforts should be extended in developing and researching programs for improving visual imagery.

Future Developments

Programmed instruction and various kinds of machine teaching have made important inroads in several instructional areas during the past decade. Their contributions to spelling could be valuable, but must be established through careful research. It is important that future spelling research be conducted over sufficiently long periods of time for differences to reveal themselves. Too often studies are conducted over short periods of time which often make it impossible to determine whether or not real differences exist between methods used.

Undoubtedly there are many unheard of innovations that will appear as increasing funds and efforts are extended for their development. People should be encouraged to take advantage of that which presently is available, but they should also remain open to forthcoming methods and devices that will aid both the teacher and the learner of spelling.

CHAPTER VI

SUMMARY

One of the more widely researched areas of the curriculum is the subject of spelling; however, application of research findings has not been widespread, and improvement of teaching spelling has been slow. Research findings have been compiled in this paper in the hope that they will assist individuals attempting to improve their effectiveness in the classroom. The speller is faced with the problem of having to spell 50 different sounds with 26 letters. This task plus several inconsistencies in written English cause serious obstacles to flawless spelling. Several attempts at reform have been undertaken, but they have exerted little influence on present day spelling, leaving the teacher the task of teaching the present system as best he can.

Investigations in spelling instruction have shown wide differences among students in all classes. These differences point to needs for classroom organization and instruction methods that will help permit teachers to meet individual needs within their classrooms. Two major responsibilities teachers of spelling have are, first, wise choice of words to be taught and, second, application of effective teaching methods as they teach the selected words. Selection of words should be based on child and adult usage. These words have been largely determined by a series of well-conducted studies. Research in methodology has produced information that should be used by teachers as they organize for and decide on methods of instruction. The findings, in general, tend to support the following conclusions:

1. Children learn to spell many words in an incidental way as they study other subjects. This does not appear to be sufficient, however, and it should be supplemented by regular, direct study of words in formal and functional ways.

2. The column, or list, approach is more efficient than is the context approach.

3. Study steps have been determined which are helpful to children when they learn to spell a word. Children use the auditory, visual and kinesthetic senses when they apply these steps.

4. The test-study-test approach is superior to the study-test approach from the middle of the third grade on and probably even in early third and other primary grades.

5. Children benefit from learning only a few spelling rules. Those from which they benefit have few or no exceptions.

6. Applications of phonetic principles is an aid to spelling; but phonetic instruction should be used as an aid, not as a replacement for direct spelling instruction.

7. Research in individualized spelling instruction is limited and individualized methods vary. However, well-executed individualized approaches to spelling appear to be at least as efficient as are whole-class approaches.

8. Children do not benefit from more than seventy-five minutes of spelling instruction per week, and there is evidence that this amount of time can be reduced.

Causes for spelling differences are many and varied, and several lists of frequently occurring causes of spelling deficiency have been prepared. Other than lack of interest, the two most important contributions to a student's inability to spell are lack of auditory imagery and lack of visual imagery. Because of their potential productivity, it is wise that efforts be extended in these areas. Auditory imagery has been rather well-researched and many helpful suggestions exist that aid teachers in its development. Not nearly so much work has been done in the area of visual imagery, but a few methods have been developed that could prove helpful. There appears to be much that must yet be learned before students receive the help they need as they apply visual imagery in spelling.

No one can say just what the future holds for spelling instruction, but it is likely that published spelling programs will continue to be used widely. There will be an increase, however, of supplemental programs within individual classrooms that are designed to meet individual needs.

Continued attention should be given the areas of (1) spelling reform, (2) application of past research, (3) application of proven study steps, and (4) individualized instruction. Fruitful research can be conducted in the areas of (1) individualized instruction, (2) visual imagery, (3) programmed learning, and (4) machine teaching. All future spelling research should be conducted over sufficiently long periods of time so that real differences, if they exist, can be determined. The authors recommend that people take advantage of that which is presently available, but that they remain open to forthcoming methods and devices that will aid both the teacher and the learner of spelling.

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